THE INSECT PEST SURVEY BULLETIN.

A monthly review of entomological conditions throughout the United States.

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BUREAU OF ENTOMOLOGY
UNITED STATES
DEPARTMENT OF AGRICULTURE
AND
THE STATE ENTOMOLOGICAL
AGENCIES COOPERATING.

OUTSTANDING ENTOMOLOGICAL FEATURES OF JULY, 1921

The Hessian fly surveys in the principal wheat-producing States of the Mississippi Valley are rapidly being completed. The survey in Ohio indicates an infestation of 17 per cent of the straws. The Bureau of Crop Estimates reports a crop for this State of over 34,000,000 bushels, valued, July 1, at over $41,000,000. The Missouri Hessian fly survey is about one-half completed. The reports so far received indicate an average infestation of 21 per cent of the straws. The fly is also present in such numbers as to be a serious menace to this fall's sowings in Indiana and Nebraska. Parasitism runs so high in Ohio as to indicate a very small fall brood emerging. Illinois, Kansas, and Oregon report the fly situation as very encouraging.

The greater wheat stem maggot outbreak, reported in the last number of the Survey Bulletin, has developed even more seriously than anticipated; a survey of the situation in two counties in Oregon showed nearly $1,000,000 damage and the unsurveyed territory is many times this area. Another serious outbreak of this insect is reported from Nebraska.

The pale western cutworm outbreak, reported in the last number, has terminated, the larvae having gone into aestivation. Heavy flights of the western army cutworm moths are reported from Minnesota, Iowa, and Montana.

The jointworm is a very serious pest in Green County, Mo., having destroyed from 10 to 16 per cent of the straws, and the western wheat sawfly is reported as being numerous in northern North Dakota, the wheat having already started to lodge on account of this infestation.

The chinch bug is now reported as seriously infesting corn in Indiana, Illinois, and Missouri. The first serious outbreak in many years is reported from South Dakota and Mississippi. The damage has about ceased in Nebraska and is not serious in Kansas and Ohio.

The corn earworm is appearing in destructive numbers in Illinois, Kansas, and Florida, and a bad outbreak of the seed-corn beetle is reported from southeastern Nebraska.

Grasshopper outbreaks in the upper Mississippi Valley are reported as being under control in Minnesota, North Dakota, and northeastern Wisconsin. The poisoned bran method of control is being used throughout this region. Outbreaks are also reported from Missouri and the north-central part of New York State, while the most serious general outbreak in years is reported from Montana.

Much damage is being done by wireworms in the northern part of New York and in parts of Illinois, North Dakota, Kentucky, and Missouri.

The clover and alfalfa seed crop is threatened in several important seed-producing regions. An unusual amount of damage is being occasioned this year in Arizona by the clover gall midge infesting Peruvian alfalfa. The alfalfa seed crop in Montana is again infested by thrips; last year this insect destroyed the entire crop in some localities in this State. Reports from Oregon indicate that the clover seed midge has entered the ground in large numbers and a bad outbreak is anticipated.

The woolly apple aphis is appearing in unusually large numbers in Massachusetts and New York.

Reports have been received of a complete defoliation of apple orchards in New York and Minnesota, and serious damage in Indiana by the spring cankerworm.

The oriental peach moth has appeared in a number of commercial orchards in Fairfax County, Va., and serious damage is being done to some of this year's plantings.

The plum curculio is reported as damaging a very heavy percentage of the fruit crop in Ohio, northern New York, and Massachusetts and is especially abundant on apples in Indiana.

The quarantine on the Mexican bean beetle has been lifted owing to the fact that recent survey work has indicated that this pest is well established over so large a region that effective quarantine is impractical.

Flea-beetles attacking potatoes are unusually numerous this month in New York, South Dakota, and Delaware. Hopperburn caused by the potato or apple leafhopper is quite bad in New York, South Dakota, and Illinois.

White grubs are reported as being about twice as numerous as usual in Kansas, about 25 per cent to 75 per cent of the potato crop about Manhattan, Kans., having been damaged.

Blister beetles seem to be unusually abundant throughout the greater part of the United States, east of the Rocky Mountains. Reports of serious infestation have been received from New York, Indiana, Illinois, Ohio, Missouri, Mississippi, South Dakota, and Nebraska.

The cabbage aphis is present in such numbers in New York State as to occasion dipping of the plants before setting, and spraying of the crop in the fields. These insects have also been numerous in Nebraska.

The onion maggot is reported as doing very serious damage in New York, Indiana, and Oregon.

The camphor scale, reported in the last two numbers of the Bulletin, has been discovered very recently in Mississippi and every effort is being made to stamp out this outbreak.

The forest tent caterpillar has been doing a tremendous amount of damage to the hardwoods of northern and western Minnesota.

The cotton boll weevil seems to be very much more numerous than usual and indications are that it will do more damage than ever before in Florida and northern Mississippi. Very heavy infestations are also reported from Arkansas and Texas.

An unexpected outbreak of tobacco hornworms destroyed from 75 to 100 per cent of the crop about Madison, Wis.

I N S E C T P E S T S U R V E Y B U L L E T I N

Vol. 1 | August 1, 1921 | No.4

C E R E A L A N D F O R A G E C R O P I N S E C T S

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Ohio — H. A. Gossard. "A survey of 31 counties of the State showed an average of 17 per cent of the straws infested with Hessian fly; last year the average was 44 per cent. There are nine counties in the northwestern corner of the State which average 35 per cent, but parasitism is high in these counties, running from 50 to 60 per cent. When the flaxseeds, dead through desiccation and natural causes, are added to these only 10 to 20 per cent of the flaxseeds are living. The average infestation for the remainder of the State is about 9 per cent, and parasitism in some counties ran 100 per cent according to our counts.

Indiana — J. J. Davis (July 15). "A systematic survey has not yet been made. There is a fairly heavy infestation of the spring brood, and we anticipate a heavy fall issuance."

Illinois — W. P. Flint (July 18). "Much less fallen straw at harvest than is the case in average years over the entire State."

Wisconsin — H. F. Wilson (July 11). "Previous to 1918 the Hessian fly had not been reported in this State for a number of years; now it is known to occur clear across the State in the southern tier of counties. No serious outbreaks have been reported."

Nebraska — M. H. Swenk (July 15). "Is a serious menace to the crop of winter wheat to be planted this fall over all of the eastern one-half counties of the State, south of the Platte River and west of the 97th meridian. Especially numerous in Washington and Burt Counties. Emergence has not yet commenced in our rearing cages. Altogether this insect is the most menacing pest of Nebraska's grain crop at present."

Missouri — L. Haseman. "The Hessian fly survey which is being completed has revealed the presence of heavy infestation and danger of serious loss to the next wheat crop in various parts of the State. The average infestation of the 29 counties for which percentages have been worked out amounts to 21 per cent; the greatest infestation seems to be in a belt extending across the

central part of the State, where the average percentage of infested tillers is 36. The infestation varies from as low as 1 per cent in Green and Nodaway Counties to as high as 94 per cent in Audrian County; the survey is not yet complete, and later figures may alter these percentages."

Kansas — E. G. Kelly (July 18). "Slight infestation over the eastern half of the State. Second or supplementary brood occurred in late May and early June."

Oregon — A. L. Lovett. "Generally below average in abundance. Adults active June 1st."

L. P. Rockwood (June 25). "At Pleasant Hill, Lane County, 85 per cent of the plants and 60 per cent of the tillers are infested. The second brood of flies emerging the last of May increased the infestation in this field. The second spring brood was apparently through on June 25."

GREATER WHEAT STEM MAGGOT (Meromyza americana Fitch)

Nebraska — M. H. Swenk (July 15). "During the third week in June the injury by the wheat stem maggot which began to be noticeable in eastern Nebraska during the second week in June developed with much greater intensity, and in several fields was responsible for a loss of from 1 to 8 per cent. Rye was also seriously injured in some fields. Reports from central counties of the State, notably Antelope, Blaine, Dawson, and Phelps Counties, indicate that this pest was more numerous and injurious than in any previous year."

Oregon — L. P. Rockwood (July 3, Special Report No.15). "Professor Lovett and I covered the Grande Ronde Valley and the whole north end of Union County, Ore., very thoroughly with County Agent Avery, last week. We found the infestation of spring wheat by Meromyza americana very serious. We estimate it at from 10 to 80 per cent of the tillers, moreover, in the late-sown spring wheat where the percentage of infestation was lightest a new brood of flies were ovipositing and will increase the infestation materially. We figure a loss of at least one-half of the spring wheat crop of Union County, the principal spring wheat county of Oregon. The Bureau of Crop Estimates gave an acreage of 34,885, a crop of 697,700 bushels of a value of $1,290,000 for spring wheat in Union County last year. It is the general opinion in the county that the acreage of spring wheat is greater this year than last. We are certain that the outbreak extends into Wallowa County, 19,286 acres, 347,148 bu. 1920 estimate, as we found infested fields to the north of Elgin to the county line at the highest point between the two counties. I would expect to find it all over the north-central part of Oregon, eastern Washington, and central Idaho

where the rainfall approaches 20 inches or exceeds 15 inches. However, winter wheat is the principal crop over most of this region. I will endeavor to get a line on the area covered by this outbreak when I have cleared up the routine entailed by the beginning of the fiscal year. The outbreak appears to have been due to exceptionally favorable weather conditions. There were early rains last fall which brought out a large amount of volunteer wheat, then the backward rainy spring has been favorable to repeated broods this spring. Seeding was interrupted by weather conditions and the condition of the soil so that there is a great variety in the stage of the wheat. Our observations indicate that the main source of the infestation was the volunteer wheat as there appears to be a direct relation between the amount of infestation and the amount of volunteer wheat in the fields. Oats and barley were infested to quite an extent in places; timothy was also occasionally infested. The infestation on winter wheat is light and only occasional typical white heads are seen."

WHEAT MIDGE (Contarinia tritici Kirby)

New York — L. C. T ler (June 21). "Observed in two fields in Genesee County."

Ohio — H. A. Gossard. "Wheat midge was quite numerous over the southern and southwestern counties; it was not plentiful in the northern counties."

Indiana — J. J. Davis (July 15). "The wheat midge has been conspicuously present in many sections in Indiana, particularly in central Indiana. "

Washington — M. M. Reeher (July 15). "Many adults out in large numbers and ovipositing on spring wheat. Have had many showers and few warm days."

WESTERN WHEAT STEM MAGGOT (Hylemyia cerealis Gillette)

Nebraska — M. H. Swenk (July 15). "In Kimball and Morrill Counties there occurred injury in some fields caused by some insect working in the wheat straws just below the third or fourth joint from the head, causing a discoloration of the inner wall of the straw and a weakening of it at this point. It is believed, but not proved, that this was due to a second brood of the western wheat stem maggot, as the injury occurred in much the same localities as were infested by the first brood of that pest last April."

WESTERN ARMY CUTWORM (Euxoa auxiliaris Grote)

Minnesota — A. G. Ruggles (July 12). "Reports have been received from a great many parts of the State that there is an extreme abundance of the noctuid army cutworm. The adult moths were sent in as early as May 27."

Iowa and North Dakota. C. N. Ainslie (June 27). "Great flights of cutworm moths have been occurring everywhere in the Northwest. They appeared in Sioux City before I left in May; they were numerous in Fargo, N. Dak., and were a nuisance at Dickinson, and also at Mott, N. Dak, where they were said to have dimmed the street lights at one time by their numbers. The same phenomenon was noted at Elk Point some years ago, but the next year there was no undue increase in the number of cutworms in gardens."

Montana R. A. Cooley. "Cutworm moths of various species, but with the army cutworm predominating, have made their appearance in unprecedented numbers throughout central and eastern Montana during the last two weeks of June. The height of emergence of this species usually does not come until the first week in July. Very little damage by this insect was reported during April and May, the time when the larvae are most active, while in some former years it has been the cause of a great amount of damage, especially to winter wheat."

PALE WESTERN CUTWORM (Porosagrotis orthogonia Morr.)

Montana R. A. Cooley. "This insect has about ceased its destructiveness to grain crops, and is in the rather long quiescent period through which it passes previous to pupation about the middle of July. In a few counties in the northern part of the State more than 35 per cent of the total seeded acreage in grain crops has been destroyed, but on the whole the damage throughout the State this year has been much less than in 1920."

ARMY WORM (Cirphis unipuncta Haw.)

Nebraska M. H. Swenk (July 15). "During the third week in June there were numerous reports of heads of wheat being stripped more or less by the first brood of the true army worm. Usually the worms merely work through the field, stripping a wide swath, but in some cases as much as 50 acres were stripped. Some heads were completely eaten off, others had the awns of the heads eaten, and the berries more or less consumed, while in some fields only the awns were eaten off. By June 20 the injury was practically over and the worms went into the ground to pupate.

SPOTTED CUTWORM (Agrotis c-nigrum L.)

New York, W. T. M. Forbes (May 31). "Recently emerged moth taken at Ithaca."

JOINTWORM (Harmolita tritici Fitch)

Ohio H. A. Gossard, "Jointworms average from 1 to 4 per cent infestation for most of the counties, though Henry County recorded 25 per cent."

Missouri — A. C. Burrill (July 8). "From 10 to 16 per cent of the crop was damaged in Green County; this is the most noticeable occurrence in this State east of the Ozarks."

WESTERN WHEAT SAWFLY (Cephus cinctus Nort.)

North Dakota — Stewart Lockwood (July 18). "The grass-stem sawfly is found in large numbers this year over the northern part of the State. Marquis wheat has already started to lodge because of these insects."

EUROPEAN WHEAT SAWFLY (Cephus pygmaeus L.)

New York — C. R. Crosby and assistants report serious infestation late in June and early in July from Genesee County, where from 5 to 10 per cent of the straws were infested. By July 13 wheat was lodging badly in Monroe County. Quite a little damage by this insect was also reported from Senaca County."

COMMON SMUT BEETLE (Phalacrus politus Melsh.)

Nebraska — Myron H. Swenk (July 15). "Was reported in conspicuous numbers during the latter half of June, especially in the Platte Valley of Dawson, Lincoln, and Keith Counties, but of course no obvious injury."

CRICKETS (Gryllus assimilis Fab.)

North Dakota — Stewart Lockwood (July 18). "We are expecting a large amount of damage to shocked grain this year from crickets. I have never seen them as thick as they are at the present time."

CORN

CHINCH BUG (Blissus leucopterus Say)

Ohio — H. A. Gossard. "Chinch bugs were found in considerable numbers over most of northwestern Ohio and in restricted localities in northeastern Ohio."

Indiana — J. J. Davis (July 15). "Chinch bug was undoubtedly the outstanding problem of the month. Heaviest infestation occurred in Sullivan, Vigo, Clay, and Green Counties in the southwestern part of the State; Wayne, Henry, and counties north to Allen inclusive along the eastern side of the State. Where creosote barrier line was used in time it was thoroughly effective. There is every indication that the second brood of bugs will be abundant and destructive and that infestation next year will be even more severe unless checked by weather conditions."

Illinois — James Muster (June 21). "Bugs are now migrating from the wheat stubble in Jackson County; 50 per cent of the corn plants are infested."

W. P. Flint (July 18). "Damage has been most severe in the south-central part of the State; many entire fields of corn have been destroyed. 75 per cent of the bugs are now adults. Eggs are being deposited for the second generation. Creosote barriers have proved very satisfactory. Oats also severely damaged; as high as 30 acres in one field being killed by these insects. In this section more bugs have been bred in oats than in wheat."

South Dakota. H. C. Severin (July 18). "This is the first time chinch bugs have appeared in injurious numbers during my 12 years experience in Dakota. The bugs are now migrating into the corn; many of the bugs are mature."

Nebraska. M. H. Swenk (July 15). "As was anticipated in my previous reports injury by chinch bugs developed in Thayer County during the last 7 or 8 days in June and the first week in July, when the bugs migrated from the wheat into the corn, but even heavier injury developed in Jefferson, the next county to the east in the vicinity of Endicott, Powell, and Steele County. Chinch bug injury is practically over at the time of writing this report."

Kansas. E. G. Kelly (July 18). "Few adults scattered throughout most corn-fields over the eastern third of State. No damage this season; adults migrating to sorghum and sudan grass."

Missouri. L. A. Haseman (July 10). "During the month the chinch bug has been the most prominent insect in the State; less damage was done than was anticipated; due to the spring weather conditions the spring brood was late maturing and at wheat-cutting time most of the nymphs were yet in the early nymph stages. The young of the summer brood are beginning their work on the corn and if dry weather continues serious damage may be expected."

Mississippi R. W. Harned (July 23). "Reported a number of times during June. Most of these reports came from counties in the Yazoo-Mississippi Delta in the western part of the State. A few of them came from the northeast prairie section of the State. Corn is the principal crop injured. The chinch bug is not normally a serious pest in Mississippi but the long drought this spring made conditions favorable for their rapid increase."

CORN EARWORM (Chloridea obsoleta Fab.)

New York. L. O. Gratz (July 16). "Abundant in some fields about Eden."

E. P. Felt (July 23). "Corn earworm was found the last of June in small numbers just north of Gowanda, in Cattaraugus County, and in mid July very serious local injury was reported from Albany County."

Ohio. L. Haseman (July 10). "This insect did some damage in the tassels of young corn late in June and the second summer brood of larvae

later began on the ears of early corn. It is not as abu I
as usual at this season of the year."

Illinois W. P. Flint (July 18). "More abundant than usual over t I
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Kansas E. G. Kelly (July 18). "This insect has been a serious
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in Mississippi. This species was abundant last year and
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Florida J. R. Watson (July 15). "Some fields have been complete
stroyed by this insect about Sandford."

Jeff Chaffin (July 20). " Complaints have been coming i M
over southern Florida. The insect is doing very little
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ARMY WORM (Cirphis unipuncta Haw.)

Illinois W. P. Flint (July 19). "Adults scarce from June 1 to 28.
Abundant from that date to July 9. Observed in small nu
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FALL ARMY WORM (Laphygma frugiperda S. & A.)

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South Carolina Philip Luginbill (June 21). "A full-grown larva was t
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(July 5) Although the fall army worm has appeared in thi
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Present generation is scattering and in the first and se
stars. Weather conditions are unfavorable and it seems
whether the insect will do any great damage." M

Florida J. R. Watson (July 17). "This insect sometimes appears
State as early as April; was first noticed this month at
Polk County."

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Jeff Chaffin (July 19). "First observed at Plant City o
date. Quite likely this insect will cause considerable
during the next 30 days."

SUGAR-CANE BORER (Diatraea saccharalis Fab.) Fl

Louisiana T. H. Jones (June 30). "Cornstalks have been sent in fr
Francisville, containing larvae and pupae."

W. P. Flint (July 18). "Damage has been most severe in the south-central part of the State; many entire fields of corn have been destroyed. 75 per cent of the bugs are now adults. Eggs are being deposited for the second generation. Creosote barriers have proved very satisfactory. Oats also severely damaged; as high as 30 acres in one field being killed by these insects. In this section more bugs have been bred in oats than in wheat."

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CORN EARWORM (Chloridea obsoleta Fab.)

New York. L. O. Gratz (July 16). "Abundant in some fields about Eden."

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later began on the ears of early corn. It is not as abundant as usual at this season of the year."

Illinois — W. P. Flint (July 18). "More abundant than usual over the entire State. Worms just becoming full grown."

Kansas — E. G. Kelly (July 18). "This insect has been a serious pest to sweet corn."

Mississippi — R. W. Harned (July 23). "Seems to be very scarce this year in Mississippi. This species was abundant last year and did much damage late in the season; its parasites were very numerous."

Florida — J. R. Watson (July 15). "Some fields have been completely destroyed by this insect about Sandford."

Jeff Chaffin (July 20). "Complaints have been coming in from all over southern Florida. The insect is doing very little if any damage in northern and western Florida."

ARMY WORM (Cirphis unipuncta Haw.)

Illinois — W. P. Flint (July 19). "Adults scarce from June 1 to 28. Abundant from that date to July 9. Observed in small numbers from July 9 to 19."

FALL ARMY WORM (Laphygma frugiperda S. & A.)

South Carolina — Philip Luginbill (June 21). "A full-grown larva was taken from corn at Columbia; this is about two weeks earlier than the insect has appeared for the past 8 years at this latitude. (July 5) Although the fall army worm has appeared in this locality no serious trouble is to be expected from it this year. Present generation is scattering and in the first and second instars. Weather conditions are unfavorable and it seems doubtful whether the insect will do any great damage."

Florida — J. R. Watson (July 17). "This insect sometimes appears in this State as early as April; was first noticed this month at Bartow, Polk County."

Jeff Chaffin (July 19). "First observed at Plant City on this date. Quite likely this insect will cause considerable damage during the next 30 days."

SUGAR-CANE BORER (Diatraea saccharalis Fab.)

Louisiana — T. H. Jones (June 30). "Cornstalks have been sent in from St. Francisville, containing larvae and pupae."

STALK BORER (Papaipema nitela Guen.)

Indiana — J. J. Davis (July 15). "Has been repeatedly reported from all sections of the State, principal crop attacked being corn."

Illinois — W. P. Flint (July 18). "Normally abundant throughout the entire State; larvae about two-thirds grown; also attacking oats, potatoes, tomatoes and peppers."

MAIZE BILLBUG (Sphenophorus maidis Chittn.)

Minnesota — A. G. Ruggles. "We have had a few complaints from two small localities in the State; the infested cornfields were near a drained peet slough which was filled in 1917. Evidently a few of the nut grass plants and others survived sufficiently to enable this insect to go through its life cycle.

TWELVE-SPOTTED CUCUMBER BEETLE (Diabrotica 12-punctata Oliv.)

Minnesota — C. N. Ainslie (June 27). "Corn rootworm is doing injury about Rochester, Minn., for the first time."

COLORADO CORN ROOTWORM (Diabrotica virgifera LeC.)

Colorado — C. P. Gillette. "Complaints of serious injury are being received and in every case from those who have planted corn following corn; plants make a stunted growth, the leaves curl and the stalks fall over. This insect is either on the increase or the farmers are becoming more familiar with its injuries."

SEED-CORN BEETLE (Agonoderus pallipes Fab.)

Nebraska — H. H. Swenk (July 15). "During July there has been a conspicuous abundance of seed-corn beetles; these have been found feeding not only on the roots of the now practically fully grown corn plants but upon the leaves of tomato and pepper plants and upon the foliage of walnut trees. The area of conspicuous abundance of the these beetles extends from Lancaster to Hall County and south to Fillmore County."

Missouri — A. C. Burrill. "About the middle of May there was a heavy swarm of this beetle at Kennett."

PRIONUS SP.

Illinois — W. P. Flint (July 18). "Caused serious damage to corn in several fields in northern Illinnis where sod land was broken for corn."

CORN LANTERN FLY (Peregrinus maidis Ashm.)

Florida — J. R. Watson (July 15). "Beginning to appear in normal numbers all over southern Florida. First observed on this date at Sandford."

GRASSHOPPERS (Acrididae)

New York — G. E. Smith (July 9). "Becoming very abundant in most sections of Orleans County."

Illinois — W. P. Flint (July 18). "Abundant in only five or six counties in southwestern part of State; have not caused much damage as yet."

Wisconsin — S. B. Fracker (July 26). "Much more common in the northwestern area than was anticipated. Held under control in the northeastern counties with poisoned bran."

Minnesota — A. G. Ruggles (July 12). "Received some specimens of a grasshopper doing damage at Grand Rapids, and found that it was a species that has never been reported as doing damage here, Melanoplus bruneri. The northern counties of the State were threatened with a grasshopper outbreak early in the season; from the latest reports, however, I believe that the pest has been held in check and undoubtedly controlled."

North Dakota — Stewart Lockwood (June 27). "Grasshoppers are now doing considerable damage in several of the north-central counties. They are being poisoned extensively and much of the crop will be saved. Melanopli are most numerous. Camnula pellucida is also quite numerous. (July 18) We have eliminated grasshopper as a damaging factor with the exception of the southeastern part of Bottineau County. A great saving has been accomplished by the use of poisoned bran bait."

Nebraska. — M. H. Swenk (July 15). "Severe injury to alfalfa and corn developed during July in Richardson, Pawnee, Nemaha, Johnson, and the southern parts of Otoe and Lancaster Counties. In the western counties grasshoppers are no more numerous than usual."

Kansas — E. G. Kelly (July 18). "Have not become very abundant in Kansas this season; very good control by the use of poisoned bran mash. They did damage to alfalfa and corn in the early part of July as they were leaving the wheat stubble."

Missouri — L. Haseman (July 10). "In places grasshoppers are attracting attention. Melanoplus differentialis seems to be the most abundant species though M. femurrubrum is also abundant."

Montana — A. L. Strand (July 22). "Camnula pellucida has been the most destructive hopper present in western Montana during the last three years. Melanoplus atlanis: This species is the predominating one west of the continental divide, in which region the grain crop was damaged approximately 25 per cent. It was much more abundant this year than for several years. Melanoplus bivittatus is working in conjunction with M. atlanis and is responsible for more than ordinary damage in the State this season."

R. A. Cooley (July 1). Grasshoppers are more generally destructive over the State than ever before known. Campaigns against them have been or are being conducted in 26 counties. In 18 of these counties the campaigns have been financed by county funds. This has been done through the operation of a law passed by the last legislature which makes it possible for county commissioners, upon the advice of the State entomologist and under proper organization, to issue county warrants in payment for the necessary supplies, the money so used to be retrieved by special tax. The species of

grasshoppers most largely concerned are Camnula pellucida and Melanoplus atlanis. Sarcophagid parasites, mostly Sarcophaga Kellyi, are appearing in large numbers in the counties east of the Continental divide and in one locality on the west side of the mountains."

WIREWORMS (Elateridae)

New York — L. E. Allen (June 18). "Many fields of corn more than 50 per cent destroyed. Considerable damage being done throughout Clinton County."

R. P. Felt (July 23). "Agriotes mancus and Melanotus communis attracted attention in Columbia and Oneida Counties because of injury to corn."

Illinois — W. P. Flint (July 18). "More numerous than usual over southern Illinois."

North Dakota — Stewart Lockwood (June 27). "Reports have been received from widely scattered areas of the State that wireworms were damaging wheat, corn, and potatoes. From the reports it would seem that the places are suffering from a heavier infestation than we have had for years past."

Kentucky — H. Garman (July 6). "Reports that wireworms of two species are working on the underground parts of young corn, sometimes being accompanied by the southern corn rootworm, and in some fields by one of the corn webworms. The injury is sometimes ascribed by farmers to the so-called corn budworm, the fact that there are three different insects at work on the plants having been overlooked. The wireworms involved are Melanotus sp. and Monocrepidius lividus.

Missouri — L. Haseman (July 10) "Numerous complaints have been received concerning wireworms and more particularly regarding the results of their earlier feeding at the crown of corn plants."

ALFALFA

CLOVER LEAFHOPPER (Agallia sanguinolenta Prov.)

Nebraska — M. H. Swenk (July 15). "Injury was reported from Douglas County, but aside from this injury and that of nematodes in Dickinson County, and injury by grasshoppers, the alfalfa crop of the State has not been injured by insect pests.

ALFALFA GALL MIDGE (Asphondylia websteri Felt)

Arizona — V. L. Wildermuth (July 6). "Doing a remarkably large amount of damage to Peruvian alfalfa of Zenor Ranch, Tempe, Ariz. One plant was examined in the laboratory and found to have 17.3 per cent of the pods infested. It is interesting to note that of these infested pods 95 per cent contained parasites. This is about the usual rate of parasitism of the second brood and largely accounts for the fact that this insect has never become a serious pest.

ALFALFA WEBWORM (Loxostege commixtalis Walker)

Kansas — E. G. Kelly (July 18). "This insect has begun to show up in great numbers in the southern counties of this State."

Colorado — C. P. Gillette. "This insect appeared in moderate numbers over a large portion of the alfalfa growing areas of eastern Colorado; this spring no fields have been reported as seriously injured however."

VARIEGATED CUTWORM (Peridroma margaritosa Haw.)

Mississippi — R. W. Harned (July 23). "Has been reported as doing serious damage to alfalfa and clover in Washington and Bolivar Counties; these reports were received during April and May. Since that time no serious complaints have been received.

THRIPS (Thysanoptera)

Montana — F. W. Beier (July 1). "This insect has caused the loss of the entire alfalfa seed crop in some localities last year and a 75 per cent loss to the honey producers. It now appears to be more abundant than usual and damage is just becoming evident."

CLOVER

CLOVER SEED MIDGE (Dasyneura leguminicola Lint.)

Oregon — L. P. Rockwood (July 10). "Rains during the haying season and rains during the last week of June were favorable to the clover seed midge, allowing them to enter the ground before the hay was removed from the fields in most cases; second generation or the seed destroying brood is now ovipositing on young clover heads. Expect a considerable reduction of seed yield due to depredations of this insect."

YELLOW-BEAR CATERPILLAR (Diacrisia virginica Fab.)

New York — J. J. Detwiler (July 15). "Larvae now in next to the last instar at Ithaca."

FRUIT INSECTS

APPLE

GREEN APPLE APHIS (Aphis pomi DeG.)

New York — C. R. Crosby and assistants. "Were plentiful by July 9th throughout Orleans County, also numerous early in the month in Clinton, Columbia, and Dutchess Counties."

Ohio — H. A. Gossard (June 23). "This insect threatened much damage a few weeks ago but syrphus flies, lady bugs and other natural enemies seem to have the upper hand at the present time and we do not anticipate serious damage anywhere.

ROSY APPLE APHIS (Anuraphis roseus Baker)

New York — C. R. Crosby and assistants. "Quite abundant in Tompkins County late in June. Had mostly disappeared from the apples by July 9 in Orleans, Columbia, and Dutchess Counties."

Ohio — H. A. Gossard (June 23). "Has been found quite abundant in a few orchards."

WOOLLY APPLE APHIS (Eriosoma lanigerum Hausm.)

Massachusetts — A. I. Bourne (July 20). "Seems to be appearing in rather larger numbers than is usually the case. Aside from this species, however, orchard plant-lice do not seem to be in particular evidence."

New York — C. R. Crosby and assistants. "More abundant than usual in Orleans and Columbia Counties. Slight infestations noted in Albany and Dutchess Counties. Common in neglected orchards in Nassau County."

CODLING MOTH (Carpocapsa pomonella L.)

New York — L. F. Strickland (July 9). "Codling moth began ovipositing in Niagara County on June 24. Number of eggs constantly increased until July 1 when it had reached a higher point than at any time during the past five years. First codling moth larva observed on July 1. Considerable parasitism of codling moth eggs is taking place, but has not reached the percentage attained in 1920. First larva to leave the apple for pupation was observed July 6; however, but few larvae have reached the pink stage yet. The high peak of egg laying this season occurred on July 4th.

C. R. Crosby and assistants report first-brood larvae hatching in many orchards in Orleans County on June 25, where the outbreak is not as abundant as last year. A normal outbreak in Seneca County and less numerous than usual in Dutchess, Columbia, and Nassau Counties.

Virginia — L. A. Stearns (July 7th). "First brood worms of codling moth were leaving fruit in greatest numbers at the close of the month of June. First brood moths emerged June 24th. First section brood eggs laid June 24th and hatched June 29th. The application against the side worm will be timed about July 20th in Northern Virginia."

Ohio — H. A. Gossard. "Stragglers of the first brood of codling moths kept appearing until two weeks ago at Wooster; the first moths of the second brood came a day or two ago. Since very complete samples were taken we are assured that the second brood is just now coming in northern Ohio."

Indiana — J. J. Davis (July 15). "Codling moth has been common as usual."

Oregon — A. L. Lovett (July 15). "Worms extremely scarce in Willamette Valley. Development retarded and generations not well defined. The hold-over from the first generation and the early second generation apparently just pupating."

FRUIT TREE LEAF-ROLLER (Archips argyrospila Walk.)

Montana — A. L. Strand (July 22). "Great damage by this insect occurred in the Bitter Root Valley last year, 500 acres of orchards having been entirely defoliated as a result of the failure to control them of the miscible oil used. The brand used this year has proved more effective.

New York — C. R. Crosby and assistants report this insect as doing from four to five per cent damage in the southern half of Wayne County, and not above one per cent in the northern half, and as common but not abundant in Dutchess County in late June.

BUD MOTH (Tmetocera ocellana Schif.)

New York — C. R. Crosby and assistants report this insect as practically disappearing by the end of June.

GREEN FRUIT WORM (Xylina antennata Walk.)

New York — C. R. Crosby and assistants report this insect as fairly common late in June in Wayne and Dutchess Counties; also common on unsprayed trees in Nassau County.

E. P. Felt (June 10). "Causing considerable damage at Skaneateles about the middle of June."

APPLE-LEAF SKELETONIZER (Canarsia hammondi Riley)

Nebraska — M. H. Swenk (July 15). "During the last week in June a local outbreak of this insect developed in Washington County."

APPLE AND THORN SKELETONIZER (Hemerophila pariana Clerck)

New York — E. P. Felt (June 16). "Mr. P. L. Holstead reports that this insect is evident at Blauvelt."

APPLE DAGGER-MOTH (Apatela sp.)

Nebraska — M. H. Swenk. "There was some defoliation of apple by this insect during the third week in May."

TENT CATERPILLAR (Malacosoma americana Fab.)

Massachusetts — H. T. Fernald (July 8). "Mr. F.A.Smith reports from Essex County that these insects are much more numerous than usual, being about half again as numerous as last year."

New York — C. R. Crosby and assistants report this insect as abundant in Nassau County, occasionally being observed in Ulster County, and being quite scarce in Columbia County.

Virginia — L. A. Stearns (July 7). "More abundant than usual. Practically every tree in the best cared for orchards has one or more nests."

FALL WEBWORM (Hyphantria cunea Drury).

Ohio — H. A. Gossard. "The fall webworm has been noticed rather numerously for about two weeks in some apple orchards near Wooster."

New York — C. R. Crosby and assistants report this insect as doing considerable damage to some trees in New York City on June 30, and the moths emerging in small numbers in parts of Columbia County by July 18.

SPRING CANKERWORM (Paleacrita vernata Peck)

New York — P. D. Rupert (June 24). "Southwestern part of Wayne County with fifteen or twenty orchards completely defoliated. Many other orchards considerably browned."

Indiana — J. J. Davis (July 15). "Canker worms were unusually common during June, the usual host being apple."

Minnesota — A. G. Ruggles (July 12). "Canker worms, both spring and fall forms, were again very numerous in certain parts of Minnesota. Four or five years ago we heard of this insect only around Lake Minnetonka district. Since that time it has spread toward the east and south along the principal automobile highways so that now in this section of the State it has become a very serious menace to orchards."

APPLE MAGGOT (Rhagoletis pomonella Walsh)

New York — C. R. Crosby and assistants report that first flies were observed in Onondaga County on July 8 and that they were quite common in Orange County on Yellow Transparents on July 14. The first flies were observed in Columbia County on July 5, and were emerging in small numbers on July 18 in this county.

FALSE APPLE RED BUG (Lygidea mendax Reut.)

New York — C. R. Crosby and assistants report that in Wayne County by June 24 some orchards had as high as fifty per cent of the fruit injured. In Dutchess County by June 27 adults were present. In Orleans County all were in the adult stage by July 9.

Ohio — H. A. Gossard (June 23). "Has occasioned noticeable damage in orchards about Wooster where nicotine sulphate was included in the first codling moth spray."

APPLE LEAFHOPPER (Empoasca mali LeB.)

New York C. R. Crosby and assistants report that this insect was observed June 18 as quite common in Clinton County. A few were observed in Dutchess County and it was becoming quite plentiful by June 25 in Genesee County; by June 9 it was abundant throughout Orleans County but more so in the northern part of the county where foliage injury was very noticeable.

BUFFALO TREE-HOPPER (Ceresa bubalus Fab.)

New York C. R. Crosby and assistants report this insect as less abundant than usual in Orleans County and Columbia County, and not uncommon in Nassau County where nymphs were observed June 18.

SAN JOSE SCALE (Aspidiotus perniciosus Comstock)

New York C. R. Crosby and assistants report this insect as locally more abundant than last year in Orleans County, on the increase in Dutchess County, and present but not common in Orange and Columbia Counties.

OYSTER-SHELL SCALE (Lepidosaphes ulmi L.)

New York C. R. Crosby and assistants report this insect as fairly common in Orleans County and present in smaller numbers in Orange and Dutchess Counties but not serious anywhere.

ROUNDHEADED APPLE-TREE BORER (Saperda candida Fab.)

New York C. R. Crosby and assistants report that on June 27 one ten-year-old orchard was badly infested in Dutchess County and that the insect was present in normal numbers in Columbia county.

RED SPIDER (Tetranychus telarius L.)

Maryland E. N. Cory reports that this insect is spreading in the Havre de Grace region but is not so abundant on trees that were originally infested. This is a most unusual outbreak for this State.

EUROPEAN RED MITE (Paratetranychus pilosus Can. & Fanz.)

New York C. R. Crosby and assistants report that early in July this pest was more abundant than usual in Orleans County and that injury to the foliage was very noticeable. It was also common in Orange and Tompkins Counties.

PEAR

PEAR PSYLLA (Psylla pyricola Foerst.)

New York L. F. Strickland (July 9). "Many reports of bad infestations. Where two or three applications of strong lime nicotine spray have been made the growers report satisfactory results. Outbreak is about over."

C. R. Crosby and assistants report this insect as very abundant and injurious throughout Orleans County. Second-brood nymphs were just beginning to reach the "hard-shell" stage by July 9. They also report this insect as very serious in unsprayed orchards in Ulster and Albany Counties. By July 18 this insect was all in the second brood, adult stage.

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

Massachusetts — A. I. Bourne (July 20). "Seems to be more abundant than usual, especially in unsprayed orchards."

New York — C. R. Crosby and assistants report this insect as present late in June in Onondaga County, much more abundant than usual, early in July in Orleans County, and present in noticeable numbers in Albany, Madison and Fulton Counties.

PEAR BORER (Aegeria pyri Harris)

West Virginia — W. E. Rumsey (June 29). "Apple tree badly infested. Adults just recently emerged. A few stragglers still developing. The bark peppered with protruding pupal skins."

RUSTY LEAF MITE (Phyllocoptes schlectendali Nalepa)

Oregon — A. L. Lovett (July 3). "Generally more serious than usual on pears in Lane County and on prunes in Marion County. The mites are clustered on the terminal growth in enormous numbers. At Corvallis in Benton County the infestation is less severe than last season."

P E A C H

BLACK PEACH APHIS (Anuraphis persicae-niger Smith)

Maryland — E. N. Cory (July 1). "A new orchard of about 2,000 trees at Smithsburg is badly infested. About 25 per cent of the trees are dead or dying. An old orchard near by is entirely killed."

PEACH-TWIG BORER (Anarsia lineatella Zell.)

Delaware — C. O. Houghton. "Have not observed this species here this spring where it has been very common at times during the last few years."

Oregon — A. L. Lovett (June 17). "Generally prevalent in western Oregon. Slightly above average abundance."

ORIENTAL PEACH MOTH (Laspeyresia molesta Busck)

Virginia — L. A. Stearns (July 7). "Has appeared in a number of commercial orchards in Fairfax County. In plantings of the current year damage done is very serious."

SAN JOSE SCALE (Aspidiotus perniciosus Comstock)

Georgia — O. I. Snapp (July 15). "Apparently much more numerous than usual in the Fort Valley region. Scale marks noticed in numbers in several orchards. Crawlers more numerous than for several years."

GREEN JUNE BEETLE (Cotinis nitida L.)

North Carolina — F. Sherman (July 7). "First adult of the season noted at Raleigh on June 26. Reported on peaches at Charlotte June 29. Noted injuring peaches at Raleigh July 7."

SHOT-HOLE BORER (Scolytus rugulosus Ratz.)

New York — C. R. Crosby and assistants (July 18) report this insect as injurious in a few orchards in Orleans and Columbia Counties.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

New York — C. R. Crosby and assistants (July 6). "Fruit badly infested at Tottenville."

L. F. Strickland (July 2). "Early infestation has caused a small percentage of the peaches to drop during the past two weeks."

North Carolina — F. Sherman (July 1). "Began to find adults on peaches after several weeks absence. These are evidently the progeny of the first adults noted early in the season."

Georgia — O. I. Snapp (July 9). "The curculio suppression campaign conducted by the Federal Bureau of Entomology has been very successful. Many orchards produced practically wormless crops this year whereas last year the damage was so severe that the late crops were not harvested. The loss from Curculio for 1920 was over $2,000,000 while this year's crop brought the growers over $5,000,000."

C H E R R Y

CHERRY APHIS (Myzus cerasi Fab.)

New York — C. R. Crosby. "Infestations noted late in June at Sherburne, Syracuse and New York City."

West Virginia — W. E. Rumsey (June 21). "Reported as very serious on cherry trees in Marshall County."

Nebraska — M. H. Swenk (July 15). "During the middle of June there was a local outbreak in Scottsbluff County."

CHERRY MAGGOT (Rhagoletis cingulata Loew)

New York — C. R. Crosby and assistants report that damage by this insect first appeared in Wayne County June 27 and seemed to be confined entirely to Montmorencies. By July 2 the flies were just starting to work on late Morellos. Damage to early cherries was recorded at Orleans County on

July 2 and serious damage was reported from Onondaga on July 16. On July 18 reports of injury were received from Columbia County.

Oregon — A. L. Lovett (June 28). "This insect is from 30 to 60 per cent less abundant than last year. A large number of the commercial growers are now using poison sprays of which two have already been made."

PEAR AND CHERRY SLUG (*Caliroa cerasi* L.)

Oregon — A. L. Lovett (July 15). "Outbreak about normal in the Willamette Valley on cherry, pear, and plum."

Nebraska — M. H. Swenk (July 15). "An unusual amount of skeletonizing of cherry leaves by the pear slug took place throughout eastern Nebraska during late June and early July.

P L U M

PLUM CURCULIO (*Conotrachelus nenuphar* Hbst.)

Massachusetts — H. T. Fernald (July 8). "Mr. F. A. Smith reports from Essex County that these insects are working more severely than usual."

New York — C. R. Crosby and assistants report that this insect is doing considerable damage in Dutchess and Wayne Counties. In the latter county the injury seems to be confined to orchards near stone fences and woods. It is also reported as fairly injurious in Orleans and Nassau Counties.

Ohio — H. A. Gossard. "As the season progresses it becomes more evident that the curculio injury to apples and stone fruits will run very high this season."

Indiana — J. J. Davis (July 15). "The plum curculio has been especially abundant on apple."

EUROPEAN FRUIT LECANIUM (*Lecanium corni* Bouché)

New York — G. E. Smith (July 9). "Abundant and injurious, particularly in the western half of Orleans County. Worst on plum and cherry but fairly plentiful on apple and pear."

C U R R A N T

CURRANT APHIS (*Myzus ribis* L.)

New York — P. J. Parrott (July 9). "Currant bushes on the station's experiment plots have been abandoned due to the attack of the currant aphis."

C. R. Crosby and assistants report this insect as more or less serious during late June and early July in Fulton, Delaware, and Orleans Counties.

G O O S E B E R R Y

HOUGHTON'S GOOSEBERRY APHIS (Aphis houghtonensis Troop)

Indiana — J. J. Davis (July 15). "Has been very abundant and destructive. All of our reports and observations are in the northern half of the State."

FOUR-LINED PLANT-BUG (Poecilocapsus lineatus Fab.)

New York — E. G. Brongham (July 2). "Plants observed with considerable injury in Delaware County."

GOOSEBERRY SPANWORM (Cymatophora ribearia Fitch)

Nebraska — M. H. Swenk (July 15). "During the third week in June in Scottsbluff County there was serious injury to gooseberries by this insect. This is the first time that it has been found doing serious injury in the State."

C R A N B E R R Y

CRANBERRY GIRDLER (Crambus hortuellus Hübn.)

New York — W. T. M. Forbes. "Early in June the moths of this insect were very common in meadows."

G R A P E

GRAPE LEAFHOPPER (Erythroneura comes Say)

New York — C. R. Crosby and assistants report this insect as fairly abundant on all grapes in Orleans County during the first week in July. In Niagara County the eggs had finished hatching by June 28. Infestation in this county was not as heavy as that in 1917, still somewhat serious. Generally present in Columbia County but not in destructive numbers. Light infestations also in Dutchess and Ulster Counties.

Nebraska — M. H. Swenk (July 15). "This insect put in an appearance during early June and continued its injury on the grape and woodbine throughout that month and the early part of July. At this time the discolored foliage of the grape is beginning to drop."

GRAPE ROOTWORM (Fidia viticida Walsh)

Delaware — C. O. Houghton (June 30). "This species is not common here and apparently little injury is caused by it."

Nebraska — M. H. Swenk (July 15). "Beetle of the grape rootworm put in its appearance in eastern Nebraska on July 1."

R A S P B E R R Y

TWO-SPOTTED OBEREA (Oberea bimaculata Oliv.)

New York — H. W. Fitch (July 1). "Some injury observed in Albany County."

Delaware — C. O. Houghton (July 11). "Comparatively little injury is caused by this species about Newark."

RASPBERRY FRUIT-WORM (Byturus unicolor Say)

New York — J. B. Palmer (July 2). "Raspberries are selling at an extremely low price in Ulster County due to the crumbly, misshapen berries and their damp condition. The crumbly berries are due in part to the work of this beetle."

RASPBERRY SAWFLY (Monophadnoides rubi Harris)

Wisconsin — S. B. Fracker (July 10). "More common than usual about Oshkosh."

Oregon — A. L. Lovett (June 20). "More plentiful than usual in the lower Willamette Valley where from two to five per cent of the loganberries are damaged. Spraying commercial plantings with arsenate of lead is being generally practised for the first time."

B L A C K B E R R Y

GREEN JUNE BEETLE (Cotinis nitida L.)

Missouri — Leonard Haseman (July 10). "Blackberries in central Missouri have been seriously affected by this beetle."

P E C A N

PECAN PHYLLOXERA (Phylloxera devastatrix Perg.)

Mississippi — R. W. Harned (July 23). "This spring more complaints were received in regard to this insect than during any of the past 15 years. These complaints came from about twenty different towns in all parts of the State."

F I G

CITRUS MEALYBUG (Pseudococcus citri Risso)

Mississippi — R. W. Harned (July 23). "The citrus mealybug has been especially numerous on figs in the southern half of the State."

SOUTHERN FIELD-CROP INSECTS

COTTON

COTTON BOLL WEEVIL (Anthonomus grandis Boh.)

North Carolina — Franklin Sherman (July 8). "Some punctured squares and a larva were sent in from Anson County today. These are the first reports of activities that we have received this year."

Florida — C. A. Bass (July 18). "More abundant than usual in Bradford County; 75 per cent of the squares are infested."

Jeff Chaffin (July 20). "Reports indicate that boll weevil is doing more damage this year than ever before in the cotton growing section.

Arkansas — W. J. Baerg (July 11). "Very severe infestation; if weather favors the weevil a very poor crop is expected. This insect has also appeared for the first time in Cleburne County. The line of infestation in the State according to Dr. J. A. Elliott, Plant Pathologist, and Mr. H. K. Thatcher extends over the entire southern part of the State, south of a line starting from the west-central border of Polk County, in a northeasterly direction to the center of Cleburne County, and thence eastward to the eas t-central border of Mississippi County. Mr. C. S. Bouten, State Crop Reporter, places the weevil-infested area south of a line extending from the southwestern corner of Polk County to the south-central border of Van Buren County, and thence in a south-easterly direction to the east-central border of Phillips County."

Mississippi — R. W. Harned (July 23). "More abundant in the northern part of the State this year than during any previous year; several observations indicate that the boll weevil parasites are unusually abundant in certain areas this year; one field examined recently showed that 65 per cent of the weevil larvae were parasitized; on the other hand, in some fields no parasites could be found."

Texas — M. C. Tanquary. "Infestation very general and very heavy, but dry weather in July has greatly reduced the rate of increase."

COWPEA CURCULIO (Chalcodermus aeneus Boh.)

North Carolina — Franklin Sherman. "Reports of damage from eastern North Carolina not serious."

BROWN COLASPIS (Colaspis brunnea Fab.)

Mississippi R. W. Harned (July 23). "Has been reported quite frequently this season as damaging cotton and beans."

SNOWY TREE CRICKET (Oecanthus niveus DeG.)

Arkansas W. J. Baerg (July 11). "Three to five per cent of the plants were killed by the egg punctures of this insect in Scotts County."

COTTON RED SPIDER (Tetranychus spp)

North Carolina Franklin Sherman (July 7). "Wake and Craven Counties report this insect as being very abundant, but as yet not epidemic, though weather to date has been favorable; recent rains may have checked it."

TOBACCO

TOBACCO SPLITWORM (Phthorimaea operculella Zell.)

Florida F. S. Chamberlin (July 23). "This insect, while not present in sufficient numbers to do much damage, has been observed to be more abundant than usual this season."

NORTHERN TOBACCO HORNWORM (Phlegethontius quinquemaculatus Haw.)

New York D. D. Ward (July 16). "Growers in Onondaga County report considerable injury."

Wisconsin J. E. Dudley. "An unexpected outbreak has developed around Madison, Dane, and Rock City; from 75 to 100 per cent of the crop has been damaged. The northern tobacco hornworm is most abundant and its larvae are nearly full grown. The southern tobacco hornworm is much later, many of its larvae are in the first and second stages.

S. B. Fracker (July 26). "Heavy loss in Rock County; outbreaks were unexpected and damage was done before the farmers could secure a supply of spray materials.

SUGAR CANE

SUGAR-CANE BORER (Diatraea saccharalis Fabr.)

Louisiana T. E. Holloway. "The moths appeared early in the season after a very mild winter; the egg parasite Trichogramma minutum Riley has already been very active in parasitizing the eggs of this insect. These borers are also reported as playing havoc with cane in Thibodaux.

SUGAR-CANE BEETLE (Euetheola rugiceps LeC.)

Mississippi R. W. Harned (July 23). "Has been reported quite frequently this season as damaging corn and sugar cane, although these insects have been received from 15 or 20 different localities throughout the State; the reports in regard to their damage have come largely from the central part of Mississippi."

RICE

RICE WATER WEEVIL (Lissorhoptrus simplex Say)

Louisiana T. E. Holloway (July 23). "The rice water weevil is numerous at Crawley, La."

RICE STALK-BORER (Chilo plejadellus Zinck.)

Louisiana T. E. Holloway (July 23). "The rice stalk-borer is showing up in heading rice at Crawley, with a planting of late varieties having large stalks; the damage from this pest is increasing."

F. H. Chittenden. The Federal quarantine on the Mexican Bean Beetle has been lifted at the suggestion of the Office of Truck Crop Insect Investigations of the Bureau of Entomology owing to the fact that recent scouting has discovered this insect well established at such distant points from the original outbreak in Alabama as Southern Alabama, eastern Tennessee, and eastern Kentucky, so that practical quarantine measures are impossible.

TRUCK-CROP INSECTS

POTATO AND TOMATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

New York — "C. R. Crosby and assistants report this insect as very abundant in Erie, Genesee, Orleans, Steuben, Wyoming, Seneca, and Clinton Counties; not very abundant in the southeastern part of the State including Columbia, Dutchess, and Orange Counties. In the western part of the State the outbreak was much more serious on the early planted potatoes, the later plantings not suffering severely."

Montana — A. L. Strand (July 22). "Whereas potato beetles were very scarce last season, the present season has seen them in exceptional numbers."

POTATO FLEA-BEETLE (Epitrix cucumeris Harr.)

Maine — E. M. Patch (July 12). "The first generation (overwintering) of the flea beetles disappeared for the most part about the last of June; very few are present now about Presque Isle."

New York — C. R. Crosby and assistants report severe injury during the early part of the month in Erie, Genesee, Orleans, Steuben, Columbia, and Orange Counties; by the middle of July the beetles had mostly disappeared in the northwestern counties. A report dated July 8 indicated that the beetles were again becoming numerous in Nassau County on Long Island.

South Dakota — H. C. Severin (July 15). "More abundant than usual this year and on the increase during July."

New York — E. P. Felt (July 23). "Flea-beetles were scarcer than usual early in the season, though since July 1 they have multiplied very rapidly and are ruining tomatoes and beans in Madison County."

Delaware — C. O. Houghton (July 9). "This species is still with us in full force and causing much damage to tomatoes and potatoes."

Kentucky — H. Garman (July 6). "Epitrix fuscula and Epitrix parvula are reported as occasioning exceptional injury to potatoes in Kentucky, the fields are sometimes being very badly infested and the plants, turning brown, sometimes are practically ruined."

POTATO APHIS (Macrosiphum solanifolii Ashm.)

Maine — E. M. Patch (July 12). "Is still very rare in potato fields about Presque Isle. The few winged and mature apterous individuals represent the second generation since the rose migration and are starting their dispersal colonies. Nowhere abundant. A two-hour search in one field recently located two winged individuals."

Massachusetts H. T. Fernald (July 14) "Mr. E. R. Farrar reports that 10 per cent of the crop has been damaged about Lincoln. Heavy rains and spraying with nicotine sulphate appeared to be checking the outbreak."

A. I. Bourne (July 20). "Reports that this insect has not made its appearance to any great extent over the major part of the State. One or two complaints have been received from the eastern part of the State."

New York C. R. Crosby and assistants report that up to July 14 only occasional specimens had been observed in the western part of the State in Steuben County; In Columbia County only one field was noted as being infested up to July 18. On Long Island the outbreak started early in July; on July 2 a report was received from Nassau County, stating that the fields were quite generally infested. The heavy rains had washed off a few of these aphids, but sufficient numbers were left to cause a serious outbreak. Injury to the vines reached a stage, in a few isolated cases, where the younger leaves were commencing to curl. By July 9 in Suffolk County the situation was becoming quite serious in many fields. Cauliflower seed beds were quite generally infested and many growers were spraying them."

West Virginia P. W. Dayton (July 5). "Potatoes have been sprayed three times with arsenate of lead and Bordeaux mixture in Tucker County. The crop is almost made and damage by the aphid is about 1 per cent."

APPLE LEAFHOPPER (Empoasca mali LeB.)

New York C. R. Crosby and assistants report the adults as becoming abundant in Erie County during the first week in July. Hopperburn was severe in one-half acre patch at Spring Brook in Genesee County, where young leafhoppers were found in the potato fields on July 1. In Steuben County this insect was very severe on all early potatoes. Contact dust treatment at the rate of 100 pounds to the acre applied by hand dusters was found to have destroyed many leafhoppers, but enough remained to do considerable damage. Late potatoes did not seem to be seriously infested. In Wayne County this insect was starting to work on potatoes on July 11, and was becoming serious in Onondaga County on July 16.

Illinois W. P. Flint (July 18) "Normally abundant throughout the entire State. First brood caused serious loss to potatoes where they were not protected by Bordeaux spray."

South Dakota H. S. Severin (July 18). "Much more aburdant than usual in Brookings County; many potato fields are now practically dead from hopperburn."

TARNISHED PLANT-BUG (Lygus pratensis L.)

Maine — E. M. Patch (July 12). "Tarnished plant-bugs are rampaging in the vicinity of Presque Isle in potato fields; also feeding on corn to the extent of threatening the pollen supply."

New York — M. C. Hammond (July 14). "Present in considerable numbers in Steuben County; wilted tips of plants common."

STALK BORER (Papaipema nitela Guen.)

Massachusetts — A. I. Bourne (July 20). "The corn and potato stalk-borer is reported as doing about its normal amount of injury and seems to be as abundant as ever. One case was reported in which this insect was infesting stalks of rhubarb; this is our first record of this insect infesting rhubarb."

New York — M. D. Leonard (July 4). "Found infesting potatoes in Sullivan County."

" — E. P. Felt (July 23). "Stalk-borer larvae one-third to one-half grown were received from Eagle Bridge where they are reported as causing considerable injury."

Nebraska — M. H. Swenk (July 15). "The stalk borer continued moderate injuries during the month of June; it was reported as doing serious injury in potato fields in Douglas and Butler Counties."

THREE-LINED POTATO BEETLE (Lema trilineata Oliv.)

New York — C. R. Crosby and assistants report that this insect was found quite common but not serious in Steuben and Orange Counties.

WHEAT WIREWORM (Agriotes mancus Say)

New York — C. R. Crosby (June 30). "Very bad attack on seed pieces at Carsville, 30 to 40 worms per piece."

WHITE GRUBS (Phyllophaga spp.)

Kansas — J. W. McColloch (July 21). "About twice as numerous as usual, about 25 to 75 per cent of the crop being damaged about Manhattan. These are second-year grubs and in many cases nearly every tuber has been damaged."

BLISTER BEETLES (Meloidae)

New York — C. R. Crosby (July 7). "A few beetles of Macrobasis unicolor were found attacking potatoes in Franklin County."

Ohio — H. A. Gossard. "Potatoes have suffered more than in average seasons from a combination of blister beetles, flea-beetles, plant-bugs and leafhoppers."

Indiana — J. J. Davis (July 15). "The striped blister beetle (Epicauta vittata), the margined blister beetle (E. marginata), and the gray blister beetle (E. cinerea) were reported as being abundant during the past few weeks, especially on tomatoes and potatoes, although many other garden crops, such as beans, beets, chard, etc., are commonly reported as being damaged."

Illinois — Paul Arndt (June 23). "The steel-gray blister beetle is much more numerous than usual at Ava, the entire foliage having been removed from some fields in one afternoon. The beetles seem to come from clover fields, but as the crop is practically made the damage is not very serious."

W. P. Flint (July 18) "Epicauta sp. has been troublesome in gardens throughout the southern end of the State."

South Dakota — C. N. Ainslie (June 27). "Exceedingly abundant in the dry region west of the Missouri River; not only did field potatoes suffer, but many ornamental shrubs were stripped almost over night. At least two species are responsible for this injury."

Nebraska — H. H. Swenk (July 15). "Epicauta lemniscata was reported as injuring potatoes, tomatoes, and beets during the last week in June, and the first week in July in several localities in the State, notably in Saunders, Fillmore, and Thayer Counties."

Missouri — L. Haseman (July 10). "Two species, E. vittata and E. marginata, have become unusually abundant and have seriously injured garden crops and alfalfa fields."

Montana — A. L. Strand. "There has been a great increase in the number of Epicauta maculata accompanying the grasshopper outbreaks."

Mississippi — R. W. Harned (July 23). "E. marginata and E. lemniscata have been received from Lee County, where they are reported to be causing serious damage."

HORNWORMS (Phlegethontius spp.)

New York — C. R. Crosby and assistants report the northern tobacco hornworm as being quite common in Orange and Nassau Counties; small larvae were observed on July 8 in the latter county; the larvae were about full grown on July 14 in the former county.

Wisconsin — J. E. Dudley (July 15). "More abundant than usual at Madison and Dane City, working on tomatoes."

CORN EARWORM (Chloridea obsoleta Fab.)

Illinois — Ward O. Davis (July 2). "Fifty per cent of the tomato crop has been destroyed by these worms at Eldorado in Saline County."

Ohio — H. A. Gossard. "Has been reported from Jamestown and Jackson, doing very serious injury to tomatoes, burrowing into the stalks and ears."

New York — L. C. Tyler (July 6). "Have had practically no trouble with this insect this year in Genesee County."

CABBAGE

CABBAGE MAGGOT (Hylemyia brassicae Bouche.)

Oregon — L. P. Rockwood. "Many reports of damage to cabbage and kale plants are being received from local gardens about Forest Grove."

IMPORTED CABBAGE WORM (Pontia rapae L.)

New York — P. J. Parrott (July 9). "Abundant and destructive in Ontario County; growers are now applying arsenicals to protect cabbage plantings; some of the caterpillars are nearly mature."

" — C. R. Crosby and assistants report this insect as being very abundant in Erie County during the first week in July; mostly in the adult stage. Larvae were present in the fields July 14 in Orange County."

Delaware — C. O. Houghton (July 2). "This species appears to be less numerous than usual, but it still is doing much damage."

South Dakota — H. C. Severin (July 15). "Much more abundant than usual in the southern half of the State."

Kansas — E. G. Kelly (July 18). "Has been unusually abundant, but has been readily controlled by spraying with arsenate of lead."

CABBAGE APHIS (Brevicoryne brassicae L.)

New York — P. J. Parrott (July 9). "Present in destructive numbers in most cabbage plantings in Orleans County; more growers than ever are adopting measures to protect plantings."

" — C. R. Crosby and assistants report that this insect was very abundant during the first week of July in Erie County but disappearing by July 16; abundant by July 2 in Wayne County; damage is so severe in Ontario County that growers are spraying crops; in Orleans and Genesee Counties growers are dipping plants before setting in the field.

Nebraska — M. H. Swenk (July 15). "Has been active on cabbages and radishes."

HARLEQUIN CABBAGE BUG (Murgantia histrionica Hahn)

Missouri — L. Haseman (July 10). "This insect is continuing its northward migration; it has recently appeared in Pike County in the northeastern part of the State, and also in southeastern, west-central, and southwestern parts of the State."

STRIPED FLEA-BEETLE (Phyllotreta vittata Fab.)

New York — D. D. Ward (July 16). "Causing serious injury on some late planted fields in Onondaga County."

STRAWBERRY

STRAWBERRY LEAF-ROLLER (Ancylis comptana Froehl.)

Nebraska — M. H. Swenk (July 15). "In Douglas County the second brood was doing local injury during the second week in July, where the first brood had been injurious during the fourth week in May."

WHITE GRUB (Phyllophaga implicita Horn)

Nebraska — M. H. Swenk (July 15). "Many complaints of the killing out of strawberry beds either wholly or in part by white grubs have come to notice from all over eastern Nebraska during July."

STRAWBERRY CROWN-GIRDLER (Otiorhynchus ovatus L.)

Oregon — A. L. Lovett. "Appears to be widely distributed in Marion County which was formerly supposed to be free from this pest. Damage as yet is slight."

ASPARAGUS

ASPARAGUS BEETLE (Crioceris asparagi L.)

New York — C. R. Crosby and assistants report this insect as being quite common in Orange County and present in small numbers on Long Island on July 14.

Delaware — C. O. Houghton (July 4). "Both adults and larvae are quite common and doing considerable damage at Newark. Observed Polistes sp. and Podisus spinosus attacking these insects."

BEANS

MEXICAN BEAN BEETLE (Epilachna corrupta Muls.)

Mississippi — R. W. Harned (July 23). "Had not so far been found in Mississippi although careful search has been made for it near the Alabama line."

Colorado — C. P. Gillette. "Arrived in Fort Collins District on schedule time in more than normal numbers. We have not learned of any marked spread in the territory covered in this State."

PALE-STRIPED FLEA-BEETLE (Systena blanda Melsh.)

New York — C. R. Crosby and assistants (July 10). Report this insect as badly infesting fields in Yates County and doing slight damage in Livingston and Wayne Counties.

BANDED FLEA-BEETLE (Systena taeniata Say)

New York — G. E. Smith (June 9). "Very abundant in the western half of Orleans County, but doing damage throughout the whole county. Serious in one 4-acre field at Holley."

SOUTHERN GREEN PLANT-BUG (Nezara viridula L.)

Louisiana — T. H. Jones. "Received egg clusters and nymphs from Martin Stansbury of Perry, with a note that they caused the young lima beans and flowers to fall from the stalks."

APPLE LEAFHOPPER (Empoasca mali LeB.)

New York — C.R. Crosby and assistants (July 10.) "Nymphs and adults common in Erie County; present in small numbers in the southeastern part of Wayne County."

PEAS

PEA APHIS (Illinoia pisi Kalt.)

Massachusetts — H. T. Fernald (July 8). "Mr. F. A. Smith reports this insect as very abundant in Essex County, and Mr. L. B. Boston reports that 25 per cent of the crop has been damaged in Barnstable County."

New York — C. R.Crosby and assistants report this insect as somewhat more abundant than usual in Columbia County and present in small numbers in Steuben County."

" — E. P. Felt. "Mr. A. L. Brower of Madison County reports that the pea aphis has ruined a sowing made about April 20, and severely damaged one of May 12. There was little injury of plantings made previous to these dates."

Ohio — H. A. Gossard. "The pea aphis was noticed to be very numerous in a field of vetch at Canton."

CUCUMBERS

STRIPED CUCUMBER BEETLE (Diabrotica vittata Fab.)

Massachusetts — A. I. Bourne (July 20). "Reported as unusually abundant during the early part of the month."

New York — C. R. Crosby and assistants report this insect as present in very small numbers in Erie County; normally abundant in Columbia County, and Nassau County; and very destructive in Orleans County, where 25 per cent of the plants have been destroyed.

Kansas — E. G. Kelly (July 18). "Very abundant over the entire State, and has done considerable damage especially in larval stage. Adults have transmitted wilt in many fields."

Nebraska — M. H. Swenk (July 15). "Began a month of very serious injury to cucurbits of all kinds during the middle of June."

MELONS

COTTON APHIS (Aphis gossypii Glov.)

Kansas — E. G. Kelly (July 18). "Has not been so abundant this season as last. Very good control has been effected by the use of soapy sprays."

Nebraska — M. H. Swenk (July 15). "Beginning about June 15, many reports of injury to cucumbers and melons by the melon aphis have been received."

SQUASH

SQUASH-VINE BORER (Melittia satyriniformis Huebn.)

New York — D. D. Ward (July 16). "Causing considerable injury in gardens particularly on late squash in Onondaga County."

Illinois — W. P. Flint (July 18). "Full-grown larvae taken July 5. Cocoons same date."

Nebraska — M. H. Swenk (July 15). "Since the latter part of June there have been frequent reports of injury to pumpkins by this insect."

SQUASH BUG (Anasa tristis DeG.)

New York — J. D. Detwiler (July 15). "Eggs and nymphs; the latter mostly in the third instar, moderately abundant, adults very scarce, recently some damage becoming noticeable about Ithaca."

Indiana — J. J. Davis (July 15). "The squash bug is quite common and we have received numerous reports within the past week or two."

Nebraska — M. H. Swenk (July 15). "Since the latter part of June there have been frequent reports of injury to squashes by the squash bug."

SQUASH LADYBIRD (Epilachna borealis Fab.)

Delaware — C. O. Houghton (July 7). "About as numerous as usual about Newark."

ONIONS

ONION THRIPS (Thrips tabaci Lind.)

New York — C. R. Crosby and assistants report that early in the month this insect was causing considerable damage to onions in Wayne County, and that by July 1 they had destroyed 50 per cent of the tops in Albany County, and were doing very serious damage by July 14 in Orange County.

Indiana — J. J. Davis (July 15). "The onion thrips was also very abundant and destructive."

ONION MAGGOT (Hylemyia antiqua Meig.)

New York — C. R. Crosby and assistants report that this insect is doing very serious damage in one field in Wayne County; abundant and still doing serious damage in Orange County.

Indiana — J. J. Davis (July 15). "The onion maggot was very abundant and destructive this year."

Oregon — A. L. Lovett. "More abundant than usual in the lower Willamette Valley, destroying from 12 to 20 per cent of the crop."

YELLOW BEAR CATERPILLAR (Diacrisia virginica Fab.)

New York — M. D. Leonard (June 29). "Young caterpillars were doing considerable injury in one field of onions in Genesee County."

CELERY

CELERY BUTTERFLY (Papilio polyxenes Fab.)

New York — M. C. Hammond (July 14) "Not uncommon in Orange County; larvae now working and butterflies numerous."

BEETS AND SPINACH

SPINACH LEAF-MINER (Pegomya hyoscyami Panz.)

New York — C. R. Crosby and assistants report that this insect is fairly abundant and injurious in Orleans County.

STRIPED BLISTER BEETLE (Epicauta vittata Fab.)

Pennsylvania — N. E. Garber (July 19). "A half-acre field in Bucks County was attacked, apparently from several small centers of infestation; the plants attacked were considerably defoliated."

FOREST AND SHADE-TREE INSECTS

GENERAL FEEDERS

WHITE-MARKED TUSSOCK MOTH (Hemerocampa leucostigma S. & A.)

New York — E. P. Felt (July 23). "This insect is generally present upon young trees in the vicinity of New York City, though as a rule it does not cause severe injury; very abundant in Buffalo area, partially stripping the trees."

C. R. Crosby and assistants report that this insect is quite common on Long Island and present in small numbers in Wayne County.

Indiana — J. J. Davis (July 15). "The tussock moth seems to be normally abundant."

Illinois — W. P. Flint (July 18). "Increasingly abundant in all cities and larger towns in northern Illinois."

Iowa — C. N. Ainslie (June 27). "Unusually abundant in Sioux City, and is doing much damage to shade trees and to rose bushes."

Nebraska — M. H. Swenk (July 15). "Developed caterpillars in such numbers as to more or less defoliate many shade trees in towns and villages of eastern Nebraska. Serious injury and annoyance is anticipated next month because of second brood."

South Dakota — H. C. Severin (July 18). "Much more abundant in Davis, Turner, Clay, and Union Counties; ordinarily this pest is single brooded, this year it is double."

FALL WEBWORM (Hyphantria cunea Drury)

North Carolina — Franklin Sherman. "More prevalent than normal about Raleigh, particularly on sycamore and Liquidambar."

Mississippi — R. W. Harned (July 23). "This insect has been reported as rather serious in several isolated places in southern part of State."

Louisiana — T. H. Jones. "First report of injury was received from Iberville Parish, June 13; within the next few days many complaints were received. Plants most severely attacked were pecan, willow, gum, pear, mulberry, persimmon, elderberry, and peach. On May 22 a flight of moths was noted at Baton Rouge; moths from June brood began to appear July 5. A survey was conducted to ascertain the extent of this outbreak, the result of which indicated that it was severe in the southeastern part of the State, over an area

covering the northern half of St. Bernard, Plaquemines, Jefferson, Lafourche, Terrebonne, St. Mary, Iberia, the eastern half of Lafayette and St. Landry Parishes, and the southern half of Pointe Coupee, East Baton Rouge, Livingston, Tangipahoa and St. Tammany, and all of Orleans, St. Charles, St. John, St. James, Ascension, Iberville, St. Martin, and West Baton Rouge Parishes."

FOREST TENT CATERPILLAR (Malacosoma disstria Hübn.)

Minnesota — A. G. Ruggles (July 12). "Did a tremendous amount of damage to hardwood in the north and western part of the State. They were particularly abundant around many of the lake resorts; basswood was first attacked, as oviposition took place on these trees. This is the third year of great abundance of this species."

BAGWORM (Thyridopteryx ephemeraeformis Haw.)

Indiana — J. J. Davis (July 15). "Reported as abundant on shade trees and ornamentals as usual in the northern end of the State."

Missouri — A. C. Burrill. "Quite abundant in Carthage, necessitating spraying of the shade trees."

FALL CANKERWORM (Alsophila pometaria Harris)

North Carolina — Franklin Sherman. "Reports have been received from Avery County, also Watanga County, both in the mountain districts of the State, where the worms have been working for the past four years. Outbreaks seem to be less serious than usual."

MAPLE

GREEN-STRIPED MAPLE WORM (Anisota rubicunda Fab.)

Missouri — L. Haseman (July 10). "Green maple worms have seriously damaged foliage of a grove of maples in Clinton County; adults emerged from pupae between July 1 and July 10."

GREEN MAPLE WORM (Xylina sp.)

New York — E. P. Felt (July 23). "H. Notman reports from Silver Beach, Oneida County, that these worms were so abundant on June 14 that the ground between the trees was thickly strewn with pieces of leaves."

MAPLE SESIAN (Sesia acerni Clem.)

New York — E. P. Felt (July 23). "This insect is generally distributed and seriously injurious to soft maples at Kenmore, Erie County."

ALDER BLIGHT (Procorthilus tessellatus Fitch)

Massachusetts H. T. Fernald (June 28). "Franklin County Farm Bureau reports that this insect has considerably disfigured soft maples in Greenfield and Gill."

New York M. D. Leonard (July 12) reports that infested trees were observed at Catskill.

West Virginia W. E. Rumsey (June 25) reports that maple trees in Barbour County are being covered with small insects similar to those assembled on beech.

MAPLE LEAF STEM-BORER (Caulacampus acericaulis MacG.)

Massachusetts A. I. Bourne (July 20) reports that this insect has been the cause of complaint from several sources this year.

ELM

ELM LEAF-BEETLE (Galerucella luteola Müll.)

New York E. P. Felt (July 8). "Mr. R. E. Horsey reports that about 20 blocks in the southern portion of the City of Rochester are quite badly infested; began to pupate on this date."

Oregon A. L. Lovett (July 19). "More abundant than usual in Benton County, less so in Marion and Multnomah Counties; larvae now about mature, first recently emerged adults observed yesterday."

ELM BORER (Saperda tridentata Oliv.)

New York E. P. Felt (July 23) reports that this insect is somewhat abundant and injurious on western Long Island.

ELM SPANWORM (Ennomos subsignarius Hübn.)

New York E. P. Felt (June 26) reports that heavy flight of moths was noticed at Rochester.

L. F. Strickland (June 28). "Unusually large flight of moths in Niagara County."

L. C. Tyler (June 30). "Woodland trees badly defoliated over considerable area in South Byron; pupae are numerous."

G. E. Smith (July 9). "An enormous flight of moths took place for about four days, beginning June 25, in Orleans County. Woodland trees are now badly defoliated in several parts of the County."

WHITE ELM SCALE (Chionaspis americana John.)

New York — E. P. Felt (July 23). "Decidedly abundant and injurious on young elms on western Long Island, causing the dying of branches."

EUROPEAN ELM CASE-BEARER (Coleophora limosipennella Dup.)

New York — E. P. Felt (July 23). "Abundant in the vicinity of Oyster Bay; so serious that a considerable proportion of the leaves will fall."

ELM SCALE (Gossyparia spuria Mod.)

New York — E. P. Felt (July 23). "Somewhat more abundant on Scotch and English elms in the vicinity of New York City, and occurs in small numbers on American elms in Hudson and Mohawk Valleys."

Idaho — J. C. Evenden (June 25). "Nearly every tree in Coeur d'Alene is very heavily attacked by the elm bark-louse."

WOOLLY ELM APHIS (Eriosoma americana Riley.)

New York — E. P. Felt (June 25). "Reported as causing some injury at Oneonta."

Missouri — L. Haseman (July 10). "Especially abundant on elms. The form causing elm curl has reappeared recently in the central part of the State."

POPLAR

COTTONWOOD LEAF-BEETLE (Lina scripta Fab.)

Nebraska — M. H. Swenk (July 15). "More than normally abundant in the latter part of June."

POPLAR BORER (Saperda calcarata Say)

Nebraska — M. H. Swenk (July 15). "This insect continues to be the subject of many complaints of injury."

ASH

CARPENTER WORM (Prionoxystus robiniae Peck.)

Nebraska — M. H. Swenk (July 15). "Carpenter worm on ash and maple trees continues to be the subject of many complaints of injury."

TULIP

TULIP-TREE SCALE (Toumeyella liriodendri Gmel.)

New York — M. D. Leonard (June 27). "Trees badly infested at Pocantico Hills."

West Virginia — W. E. Rumsey (June 29). "Bad on trees in Marion County."

BIRCH

BRONZE BIRCH BORER (Agrilus anxius Gory)

Idaho — J. C. Evenden (July 1). "Several shade trees attacked at Coeur d'Alene."

WALNUT CATERPILLAR (Datana integerrima G.& R.)

Nebraska — M. H. Swenk (July 15). "Trees in eastern Nebraska were badly defoliated in many places during the last week in June and the first ten days in July; by July 10 most of the caterpillars had pupated."

Kansas — E. G. Kelly (July 18). "Has been very injurious to walnut trees throughout the State."

OAK

WHITE OAK BLOTCH LEAF-MINER (Lithocolletes hamadryella Clem.)

New York — E. P. Felt (July 23). "R. E. Horsey reports that this insect is common in Highland Park, Rochester, and disfigures foliage badly."

Maryland — E. N. Cory (July 8). "Correspondents have sent leaves from Baltimore where this insect is exceedingly abundant; they have been so completely mined that the entire upper surface is brown."

LOCUST LEAF-MINER (Chalepus dorsalis Thunb.)

Maryland — E. N. Cory (July 8). "Very abundant in the Potomac River Valley; this pest seems to be increasing and threatens to destroy most of the first leaves."

CATALPA

CATALPA SPHINX (Ceratomia catalpae Boisd.)

Ohio — H. A. Gossard. "A catalpa grove of 6 acres at Troy was completely defoliated in late June."

Indiana — J. J. Davis (July 15) reports that this insect is abundant in the southern end of the State.

Florida — F. S. Chamberlin. "This insect, which is usually abundant about Quincy, can only rarely be found this season."

PINE

PINE BARK APHIS (*Pineus strobi* Hartig)

New York — E. P. Felt (July 23). "Mr. R. E. Horsey reports that this insect is very injurious to young pines in Rochester, having stunted them badly."

PINE LEAF SCALE (*Chionaspis pinifoliae* Fitch)

New York — E. P. Felt (July 23) reports that this insect is somewhat abundant at Schenectady.

SOUTHERN PINE BEETLE (*Dendroctonus frontalis* Zimm.)

North Carolina — Franklin Sherman (June 29). "Report of outbreak from Swain County; may possibly presage an epidemic, but I think not."

CAMPHOR

CAMPHOR SCALE (*Pseudaonidia duplex* Ckll.)

Louisiana — Extract from New Orleans Item (July 17): "The big fight to destroy the camphor scale in New Orleans has only just begun. Survey of entire City of New Orleans under way; 115 infestations of the scale outside of the main infested area have been located; 125 host plants have been listed. Of the outside infestations that have been located, 72 have been completely eradicated."

Mississippi — R. W. Harned (July 23). "The Japanese camphor scale was discovered for the first time in Mississippi on July 18 at Hattiesburg. All infested plants were immediately burned. Because of the seriousness of these insects in New Orleans we are endeavoring to inspect all plants that have been shipped from New Orleans to Mississippi during the past two years."

GREENHOUSE AND ORNAMENTAL PLANTS

SNAPDRAGON

Cosmopepla bimaculata Thomas

New York — E. P. Felt (July 23). "Mr. J. F. Rose reports that these bugs were swarming in the blossoms of snapdragons on July 15."

RHODODENDRON

RHODODENDRON TINGIS (*Leptobyrsa rhododendri* Horv.)

New York — E. P. Felt (July 23) reports that this insect has caused considerable injury to young trees; was successfully controlled by spraying with soap and nicotine sulphate.

MAGNOLIA

MAGNOLIA SCALE (Neolecanium cornuparvum Thro.)

Ohio — H. A. Gossard reports that he has recently received several complaints of the magnolia scale.

ROSE

ROSE CHAFER (Macrodactylus subspinosus Fab.)

Nebraska — M. H. Swenk (July 15) reports that heavy flights of this beetle were reported from Holt, Garfield, and Dawes Counties, during the third and fourth weeks in June, this pest causing much injury to roses and the foliage of fruit trees.

Megastigmus nigrovariegatus Ashm.

New York — C. R. Crosby (June 30). "Females abundant, ovipositing in fruit of rugosa roses."

WOODBINE

MEALY PLATA (Ormenis pruinosa Say)

Nebraska — M. H. Swenk (July 15). "Reports of injury were received from several localities in the State during the last week in June and the first week in July, the insect being numerous on other plants also.

BOXWOOD

BOXWOOD LEAF-MINER (Monarthropalpus buxi Labou.)

New York — C. R. Crosby (June 25). "Hedges badly infested at Pocantico Hills."

M. D. Leonard (July 13). "Large hedges badly infested at Mineola on Long Island."

LILAC

LILAC BORER (Podosesia syringae Harris)

New York — E. P. Felt (July 23). "Mr. C. E. Fairman reports that this insect is causing some injury to lilacs at Londonville."

INSECTS ATTACKING MAN AND DOMESTIC ANIMALS

FLEAS (Ctenocephalus canis Curtis et al.)

New York — E. P. Felt (July 23). "Cat and dog fleas were locally abundant the last of July at Yonkers, Westchester County."

Missouri — L. Haseman (July 10). "The common flea has been troublesome in some places, especially on stock farms. Some complaints have also come from cities where cats and dogs were not kept free from fleas."

CHIGGERS (Trombidium sp.)

Missouri — L. Haseman (July 10). "A plague of chiggers seems to have hit the State the latter part of June; they were so bad in some places that those who were susceptible to these attacks were not even safe on their lawns. Reports came from all over the State.

Maryland — J. A. Hyslop. (July 30). "Chiggers have been unusually abundant in Montgomery County this year."

AMERICAN DOG TICK (Dermacentor variabilis Say)

Delaware — C. O. Houghton. "This tick is very common here this year and is causing an unusual amount of annoyance."

ANTS (Formicidae)

Indiana — J. J. Davis (July 15). "Ants in houses, especially the little red ants, have been repeatedly reported as troublesome and apparently more so than in former years."

HORSE FLY (Tabanus costalis Weid.)

New York — H. C. Huckett (July 10). "Present in large numbers and are very annoying at several of the bathing beaches along the shore in Nassau County."

WAX MOTH (Galleria mellonella L.)

New York — G. H. Rea (July 12). "Old comb in cellars/is badly infested at Ithaca."